



Overview

The COVID-19 crisis in the LDCs

Initial fears that the global coronavirus disease (COVID-19) pandemic would have catastrophic *health* impacts on the least developed countries (LDCs) have not materialized; however, some LDCs (e.g. Sao Tome and Principe, Djibouti, Gambia, Afghanistan and Nepal) have experienced more wide-ranging and stronger health impacts from the pandemic. A further significant expansion of the pandemic in some LDCs in the closing months of 2020 cannot be excluded, and would have dire consequences for these countries, due to the weak health systems of most LDCs.

LDCs were able to weather the health aspects of the pandemic better than initially predicted due to country-specific factors, including: previous experience with epidemics; the policy and technological innovations adopted in reaction to COVID-19; and favourable demographics, e.g. young populations and, in most cases, low population density.

The LDCs that have better weathered the COVID-19 pandemic from a health policy perspective are those with a broader and more sophisticated base of productive capacities in their economy. More generally, the same reasoning also applies to their capacity to respond to other shocks (e.g. medical, economic or natural disasters). Countries that have been able to develop a denser and more diversified fabric of productive capacities have shown greater resilience and have been better prepared to weather different types of shocks.

While the pandemic had (at least initially) a less than catastrophic *health* impact, its *economic* repercussions have been ruinous. In 2020, the COVID-19 pandemic led to LDC economies experiencing their strongest economic shock in several decades; this, in turn, resulted in a sharp economic downturn, brought about by the combined effects of a deep world economic recession, and the consequences of the domestic containment measures adopted by LDC governments. Worse still, these consequences are likely to linger in the medium term.

Between October 2019 and October 2020, the economic growth forecast for LDCs was revised sharply downwards from 5 to -0.4 per cent. This revision is expected to lead to a 2.6 per cent reduction in per capita income in LDCs in 2020, with 43 out of 47 LDCs experiencing a fall in their average income levels. This is the worst economic outcome in 30 years for this group of countries, and represents a significant reversal of the economic and social progress achieved in recent years, including in terms of poverty and social outcomes. It also makes reaching the Sustainable Development Goals by 2030 a more distant prospect.

A protracted recession could lead to permanent job destruction, threaten enterprise survival – with related losses in terms of productive capacities and tacit knowledge – and could have a long-term effect on potential output. Avoiding this dramatic outcome will be particularly crucial in LDCs because of the structural characteristics of the entrepreneurship that are prevalent in these countries. A prolonged crisis would further deteriorate an already weak LDC entrepreneurial landscape as currently characterized by a plethora of mainly informal traditional and non-innovative businesses; a structure of firms largely skewed towards micro, small and medium-sized enterprises (MSMEs); and a private sector with limited access to credit.

The impact of the world economic recession on LDC economies has probably been stronger than the domestic demand shock. This, in turn, brought about a sharp downturn in the external demand for LDC goods and services; depressed the prices of their main exports; and caused a slump in inflows of external resources (e.g. remittances, capital). The LDCs most dependent on the export of a few products are the most vulnerable to foreign trade shocks, and were strongly affected by the sharp fall in the volume and prices of exported products on which their economies are most reliant. This pertains especially to exporters of fuels (e.g. Angola, Chad, Timor-Leste, Mozambique and Yemen); minerals and metals (e.g. Democratic Republic of the Congo, Zambia, Guinea, Sierra Leone, Eritrea and Mauritania); garments (e.g. Bangladesh, Haiti, Cambodia, Nepal and Lesotho); and tourism services (e.g. Vanuatu, Cambodia, Sao Tome and Principe and the Gambia).

The combined merchandise trade deficit of LDCs in 2020 is forecast to exceed the record level reached in 2019 (\$91 billion). Similarly, LDC exports of services have suffered a sharp blow from the virtual standstill of their main export sector – tourism. The countries hardest hit by the severe downturn in world tourism are small island States (e.g. Vanuatu, Sao Tome and Principe), but also Cambodia, the Gambia and Madagascar. It is therefore likely that the combined deficit in trade in goods and services of LDCs will widen further in 2020, thus extending the trend that started with the global financial crisis of 2008–2009. In the context of these falling volumes of world trade and plummeting LDC exports, it is unlikely that this group of countries will meet their long-standing goal on trade

enshrined in Sustainable Development Goals Target 17.11, i.e. that of doubling their share of world exports of goods and services between 2011 and 2020.

International migration and remittances flows have also suffered a major blow from the lockdowns that were introduced, and the ensuing worldwide recession. Total remittances to low- and middle-income countries (LMICs) are forecast to fall by one fifth in 2020, with an even sharper contraction expected in South Asian and sub-Saharan African countries. The LDCs most vulnerable to falling remittances are those that rely the most on them as a source of external financing, and include: Haiti, South Sudan, Nepal, Lesotho, Gambia, Yemen, Comoros, Kiribati and Senegal.

The widening trade deficit in goods and services and the contraction in remittance receipts in 2020 are expected to lead to a further expansion of the total current account deficit of LDCs as a group; this is forecast to deepen sharply from 4.6 per cent of their combined GDP in 2019 to 6.8 per cent of GDP in 2020. This will be the highest ever (or second highest) collective current account deficit for LDCs, and will continue the sequence of swelling current account deficits experienced by the LDCs since the last global financial crisis.

Widening current account deficits represent a major challenge for LDCs, as they will need to be financed by higher capital inflows. However, increasing financing needs come at a time when LDCs are seeing diminished levels of capital inflows. LDCs are the most aid-dependent economies in the world, with official development assistance (ODA) representing the most prominent type of capital inflow into these countries. This heightened need for ODA is taking place in a context in which the volume of ODA has been stagnating since 2013. Donor countries have not been respecting their long-standing commitment to deliver to LDCs ODA levels of 0.15–0.20 per cent of their gross national income (GNI). In addition, access to private financing has become even more difficult in a context of diminishing worldwide private capital flows, thereby compounding the difficulties that LDCs face in closing their external financing gap amidst the recession.

The global downturn is also expected to have a dramatic negative impact on global poverty and food insecurity. This may give rise to path-dependency and turn transient forms of poverty into chronic poverty. The COVID-19 outbreak led to a very bleak economic growth outlook for countries across the world; however, the impact on the LDCs will be even worse, as the pandemic is expected to lead to an increase of 3 percentage points – from 32.2 to 35.2 per cent – in their average poverty headcount ratio according to the \$1.90 per day poverty line. This is equivalent to a rise of over 32 million people living in extreme poverty in the LDCs, and is expected to have the deepest impact on African and island LDCs.

While this situation represents a setback for attaining Goal 1 of the Sustainable Development Goals, it also could mean that a number of other Goals, notably those related to health and education, will not be reached, as populations adopt adverse coping strategies, such as reducing their intake of healthy and nutritious food, or taking children out of school.

The downturn is likely to further undermine gender equality, as the gender dimension intersects with other axes of structural marginalization, including economic status, membership to minority groups, disability, human immunodeficiency virus (HIV) status and the like. In LDCs and elsewhere, women tend to be over-represented in vulnerable occupational categories (from health personnel to informal own-account workers), as well as in value chains that have been the hardest hit by the crisis, e.g. tourism or the textile and apparel sector.

LDC economies are beset by vulnerability, understood as the exposure of a national economy to exogenous events (shocks and instabilities) that are largely beyond domestic control, and which negatively affect their capacity to grow and develop. These economies are highly exposed to economic, environmental and health shocks. The LDCs are among the world's most vulnerable economies, as reflected in the Economic and Environmental Vulnerability Index (EVI), which indicates that they are 30 per cent more vulnerable than other developing countries (ODCs – developing countries that are not LDCs).

Under present circumstances, the major economic priorities of LDCs could fall into two time horizons. In the short term, the priority of governments should be to do “whatever it takes” to counter the present recession, support the livelihoods of their citizens, the perennity of their firms and farms, and buttress the activity level of their economy. These short-term priorities are equally valid for LDCs, ODCs and developed countries. Second, LDCs need to build resilience, which is understood as the ability of an economy to withstand exogenous shocks and/or their capacity to recover from them. Resilience is the result of a successful development process, following which economies are able to overcome the major structural features of underdevelopment, such as: concentration

of output and exports; widespread poverty; over-dependence on imports of critical goods and services; and chronic current account deficits. Building resilience therefore entails tackling the underlying structural causes of their vulnerability, underdevelopment and ingrained poverty.

The long-standing development challenges faced by LDCs predate the COVID-19 crisis. While the economic, social and political context which gives rise to extreme forms of vulnerability and poverty are complex, these phenomena have a common underlying factor, namely the low level of development of LDC productive capacities. Expanding, upgrading and better utilizing productive capacities result in overcoming the structural features which are at the origin of vulnerability. These imperatives have only been strengthened by the COVID-19 pandemic.

Against this background, it is all the more vital to highlight the continued relevance of the LDC category, not only during the “great lockdown” and its immediate aftermath, but also importantly for the new decade, which will witness the overlap between the remaining horizon of the 2030 Agenda for Sustainable Development and the next programme of action for LDCs.

In the context of the 2030 Agenda for Sustainable Development, the importance of the LDCs is even starker in relation to the objectives of shared prosperity and the eradication of extreme poverty. From the point of view of the international community, the development challenges faced by LDCs deserve particular attention, not least because low socioeconomic development is typically regarded as an influential driver of instability, conflict and migration, particularly when coupled with increasing pressure on natural resources, the intensifying adverse impacts of climate change, and limited institutional capabilities.

The reasons for reiterating that the LDCs are the battleground on which the 2030 Agenda for Sustainable Development will be won or lost go beyond the moral commitment to “leave no one behind”, and reflect long-term considerations with respect to global public goods and the potential for positive and negative spillovers across nations in an increasingly interconnected world.

Productive capacities and structural transformation: Giving concrete form to concepts to meet the needs of LDCs

Productive capacities are defined as “the productive resources, entrepreneurial capabilities and production linkages which together determine the capacity of a country to produce goods and services and enable it to grow and develop”. Sustained economic growth can only be made possible through the expansion, development and full utilization of productive capacities. Hence, the central role that productive capacities need to have in national and international development strategies.

The development of productive capacities operates, first, within firms/sectors as the profit-investment nexus fosters capital deepening and productivity gains. Second, it also takes place across sectors through, as the acquisition of productive capabilities – itself contingent on the existing pattern of production – paves the way for the emergence of new products and higher value-added activities. The process of productive capacity development hinges on a mutually reinforcing dynamic relationship between the supply- and demand-side of the economy, in so far as the expansion of aggregate demand creates the scope for denser intersectoral linkages, factor reallocation and pecuniary externalities, which collectively sustain the financial viability of investments, including in “social overhead capital”.

Productive resources develop through three processes: (i) capital or resource accumulation; (ii) technological learning and innovation; and (iii) deepening of division of labour and increasing specialization of sectors, firms and farms. Together, these three processes lead to the structural transformation of the economy. This complex process is multi-dimensional and comprises the movement of a country’s productive resources (e.g. natural resources, land, capital, labour and know-how) from low-productivity to high-productivity economic activities (typically gauged by the level of labour productivity, i.e. the value added generated during a certain period of work). Alternatively, structural transformation is understood as the ability of an economy to constantly generate new dynamic activities characterized by higher productivity and increasing returns to scale.

The process of structural transformation takes diverse forms at different income levels. At low-income levels, it is mainly the result of the transfer of resources from one sector to another. This is the case of LDCs, many of whom are at the initial stages of structural transformation. At high-income levels, by contrast, the intersectoral transfer

of resources has largely been accomplished and structural transformation mainly takes the form of the transfer of resources within sectors.

Structural transformation of the productive sphere of the economy takes place within a specific economic, social and institutional context, and there is a mutual interaction and influence between structural transformation and this environment.

Productive resources comprise physical infrastructure, which enables the supply of, among others, energy, transport, communications, irrigation, and water and sanitation services. The availability and affordability of these services is crucial for the development of productive units, as they enable the supply of inputs essential to the operation of firms and farms, and affect the costs that firms pay to access resources and markets for inputs and outputs. They are also crucial to improving living standards and the wellbeing of citizens and households.

Another type of infrastructure which has become increasingly critical is that of information and communication technologies (ICTs). They are the backbone of the digital economy and the so-called Fourth Industrial Revolution (4IR). As these technologies are increasingly critical infrastructure, they have generated increasing interest among policymakers focusing on issues related to the digital divide among and within countries. In the meantime, ICTs have expanded in several developed countries, to the point of reaching maturity (in terms of technology diffusion). The pace of diffusion of these technologies has also been accelerating in ODCs and LDCs at a quicker pace than in developed countries. This has given rise to high hopes that the international digital divide was narrowing.

However, these hopes have not been borne out by evidence. In spite of the rapid diffusion of mobile telephony and mobile-broadband access in LDCs since the beginning of the century, the digital divide remains very wide between LDCs on the one hand, and ODCs and developed countries on the other. Access to the Internet remains restricted to a minority of the population in LDCs and gender divides in Internet access are wide. Moreover, the uptake by individuals and households of mobile voice and data technologies has been larger than the uptake by productive units (e.g. firms and farms). This remains a major hindrance to the development of productive capacities in these countries, as well as to the adoption of other more modern technologies and, more broadly, the acceleration of their structural transformation.

The pace of structural transformation of output declined worldwide between the periods of 2001–2011 and 2011–2017, due to the general deceleration of worldwide economic growth in the aftermath of the global financial crisis of 2008–2009 and its lingering consequences.

The process of structural transformation in LDCs indicates that over the long run most of them have experienced a falling share of agriculture in both output and employment. The transfer of resources has been mostly in favour of the tertiary sector (i.e. services), especially in the case of African LDCs. Most of these countries have experienced the reallocation of labour from low-productivity agriculture to low-productivity urban activities, mostly occurring in the informal service sector.

Growth in the share of services in output and employment is generally seen as a sign of economic modernization. However, this overlooks the strong heterogeneity among different service subsectors. To more closely examine the composition of the service sector in LDCs, as compared to that of other country groups, service sectors are classified according to whether they are: (i) knowledge-intensive; (ii) less knowledge-intensive; and (iii) non-market.

In developed countries, the share of the three types of service activities are more or less equal. In LDCs, by contrast, the bulk of tertiary employment is concentrated in less knowledge-intensive services, e.g. retail trade, repair of motor vehicles, and accommodation and food. These are typically low-productivity and low value-added activities, and often carried out in the informal sector. These service sectors are especially important for African and island LDCs, and account for some two-thirds of employment in the service sector in these countries; however, in Asian LDCs, knowledge-intensive services account for one-fourth of services employment – a higher level than in other LDC groups.

LDCs achieved a healthy pace of labour productivity gains in the 2001–2011 period, following annual growth of 3.9 per cent, a slightly lower level than in ODCs which recorded an annual expansion of 4.6 per cent. During the following period, however, these two groups of countries diverged. Labour productivity growth decelerated in both sets of countries, but much more in LDCs, where it declined to 1.9 per cent annually, whereas in ODCs it decelerated more moderately to 3.7 per cent per annum.

The highest pace of productivity growth took place in the Asian LDCs, largely as a result of relatively faster productivity growth in manufacturing and services in countries, e.g. Bangladesh, Cambodia, Lao People's Democratic Republic and Myanmar. The deceleration in labour productivity in African LDCs during the 2011–2017 period was largely driven by the actual decline in productivity in services and other industries (especially in the mining sector). The adverse performance of productivity in services is due to two factors: (i) the continuous influx of labour not being matched by commensurate output growth in the tertiary sector; and (ii) the concentration of tertiary employment in less knowledge-intensive services, and their typically lower productivity growth potential. The share of employment in these services in LDCs is the highest among major country groups.

The overall labour productivity level of LDCs as a group has been diverging from that of ODCs as a group over the long term, as has the strength and direction of their structural transformation. In 1991 the LDC/ODC ratio was at 25 per cent, while at the beginning of the new millennium it was down to 21 per cent, finally reaching 18 per cent in 2017. The process of divergence was somewhat interrupted in the 2000s, largely as a result of the long commodities cycle, but has resumed since the global financial crisis of 2008–2009. If this divergent trend is not reversed, LDCs as a group will not be able to escape from their long-term marginalization in the world economy.

There is, however, a strong contrast between the three groups of LDCs in their structural transformation. Asian LDCs as a group are undergoing what most resembles a classical process of industrialization. Several of the countries in this group have a rising share of manufacturing in output and employment, specialization in manufacturing exports, and have experienced the strongest performance in terms of labour productivity growth, together with the attendant reduction of poverty levels and stronger progress in social outcomes. However, in order to maintain the process of growth-enhancing structural transformation, even Asian LDCs need to deepen and broaden their structural transformation, and further build their entrepreneurial and technological capabilities, in anticipation for the loss of LDC-specific trade preferences once they graduate from LDC status.

African LDCs continue to face the challenge of diversifying their economies and developing high-productivity economic activities. Given the still very significant share of employment in agriculture, these countries have a very high potential for further structural transformation. African LDCs face two contemporaneous challenges: they must strongly accelerate the rhythm of agricultural labour productivity growth; and, substantially generate employment in other sectors for their rapidly growing populations. Moreover, these new jobs need to be of a considerably higher productivity level than those found in their respective agricultural sectors.

In the 2020s the development of productive capacities in LDCs will be strongly influenced by developments in the global environment (as these are typically small open economies), as well as by policies they and their development partners will adopt. Overall, this global environment will inevitably be characterized by the lingering effects of the COVID-19 health and economic crises, and by how international economic and political relations will evolve thereafter. Some broad trends will exert a particularly marked influence on the development of productive capacities of LDCs and the broader development prospects of these countries. These trends include the reorientation of international economic and political relations in the post-COVID-19 context, the future of globalization, global value chains and regional integration, progression in climate change and policies to tackle it, demographic trends and the unfolding technological revolution (including especially digital technologies). These new technologies can potentially have a very strong impact on the development of productive capacities in LDCs in the new decade.

Measuring productive capacities: LDCs' progress towards sustainable development

The UNCTAD Productive Capacities Index. Assisting LDCs to develop their productive capacities could enhance the social development returns of economic growth and accelerate structural transformation. This is critical in the decade left to implement the 2030 Agenda for Sustainable Development. Productive capacities could help LDCs to ramp up progress on reducing extreme poverty (Sustainable Development Goal 1), bolstering agricultural productivity (Goal 2), and industrial growth (Goal 8). Achieving these goals hinges on improvements to labour productivity; however, labour productivity gains alone will not be enough to reset the course of economic development among LDCs. Improvements in human capacity should concurrently be implemented with surges in other productive capacities, e.g. energy (Goal 7), investment in infrastructure, and market interlinkages (Goal 8) and private sector development (Goal 9). Progress on these different lines is complementary and mutually supportive.

UNCTAD has developed an aggregate measure representing the endowments of productive factors, their management and transformation, and the effectiveness of market interlinkages. The Productive Capacities Index (PCI) is the most extensive analytical work done to date in terms of scope and technical effort. It encompasses eight broad categories defined over many indicators representing the main channels through which productive capacities of a country develop, namely: energy; human capital; ICTs; natural resources; transport infrastructure; institutions; the private sector; and structural change. Each category has a dedicated sub-index.

The PCI adds a crucial dimension in the assessment of the progress made by LDCs to reach internationally agreed objectives. This is demonstrated in the context of the thematic priorities of the Programme of Action for the Least Developed Countries for the Decade 2011–2020 (otherwise known as the Istanbul Programme of Action – IPoA).

The PCI scale ranges from 0 to 100, with 100 being the best score. The aggregate PCI is an average of its eight sub-indices. The PCI can be used to benchmark differences among LDCs and between LDCs and other country groups. In 2011–2018, the PCI scores in LDCs ranged from 9 to 36, with the average at 17. The median productive capacity climbed from 14.9 to 17.2 during that period, while for ODCs it rose from 27.3 to 28. Countries with a relatively high PCI have also been successful at fostering structural transformation, and have used their productive capacities to diversify their economies and exports. In 2018, the PCI of the top two developed countries ranged from 48 (Luxembourg) to 53 (United States of America), while the top two LDCs scored 28 (Bhutan) and 35 (Tuvalu) on the PCI scale.

An interactive clustering of best, least and average performers among the LDCs shows that for the years 2001, 2011 and 2018, productive capacities had improved slightly among the least performing LDCs, with the subgroup median PCI rising from 18 to 22 in 2000–2018. Overall, the rate of change in productive capacities is low for all countries, and individual LDC performances have been lacklustre. Of note is that the number of countries in the high-productive group fell from eleven countries in 2001 to only six in 2018. Meanwhile, the number of countries in the least productive group rose from 18 countries to 25 over the same period, while the number of countries in the average group ranged from 16 to 18 in 2001–2018. In addition, the composition of countries in the lower two clusters changed significantly over the years. Only two countries, Rwanda and Myanmar, climbed up the clusters in 2001–2018, moving from the low-capacity group into the average group.

LDCs posted major improvements with respect to ICTs, transport infrastructure and the structural change categories of productive capacities although, in absolute terms, their scores in 2000 and in 2018 on the bounded PCI scale (0–100) are too low compared to the scores of other country groups. LDCs lag behind ODCs in all PCI categories – with the exception of natural resources – and more particularly in ICTs, human capital and institutions. There are also significant differences among countries in energy, the private sector and structural change factors. Although the rankings by PCI scores show significant challenges among the LDCs, the performances of several LDCs, e.g. Bangladesh, Bhutan and Cambodia, prove that LDCs can reach the productive capacities level of other country groups. However, their performance is contingent on several regional factors, including a diversified economy, along with strong value chains among contiguous countries.

Progress made by LDCs towards attaining the IPoA goals. UNCTAD has carried out a comprehensive assessment of the IPoA using PCI as an added dimension. Only 13 LDCs have ever attained the 7-per-cent growth target during 2015–2018, and fewer still have managed to maintain that pace in consecutive years. The extent of the fallout from the COVID-19 pandemic is uncertain as the situation is still evolving. However, what emerged as a public health crisis has exposed the weak structures of LDC economies, their vulnerability to economic shocks, and their inability to mobilize productive capacities to adapt to changing market conditions.

The low efficiency in productive capacities utilization cannot be generalized across all LDCs. A given level of productive capacities may be associated with numerous output levels, as countries differ in their utilization of productive capacities. The per capita incomes of some LDCs, e.g. Bhutan, Sudan and Tuvalu, grew significantly in 2011–2018.

The priority sectors for economic development need to be chosen carefully. The IPoA identified the critical productive capacities as; infrastructure; energy; science, technology and innovation (STI); and private sector development. The assessment of productive capacity utilization suggests that a 1 per cent increase in energy infrastructure leads to an increase of only 0.12 per cent in per capita income. The blending of unproductive agriculture with a high share of employment in the sector, and an uncompetitive service sector with low productivity, high levels of informality and weak integration into global value chains (in terms of intensity of integration and position achieved within the value chains) reduces the impact of structural change on real GDP per capita.

During the IPoA (2011–2020), the long-standing marginalization of LDCs in international trade continued as the trade in commodities faltered because of unfavourable commodity market conditions. The clustering of LDCs around various sub-components of UNCTAD's PCI confirms the existence of specialization enclaves, which determine the level of export diversification and sophistication. Relative cost advantages and geographical advantages offering better linkages to global value chains have continued to play a critical role in boosting exports, particularly among Asian LDCs, African LDCs have, however, continued to be heavily reliant on abundant natural resources.

Human development is often a neglected agenda in LDCs, despite the fact that the objective of economic development is human development through the reduction of inequalities, the building resilient communities, and the eradication of all forms of poverty. An uneducated and untrained labour force remains an unproductive and underutilized resource. Hence, the key to reaping the demographic dividend and bridging the technology gap between LDCs and ODCs is to ensure that public investments in education and training bring skills development and knowledge to the centre of their policies. Ultimately, human beings determine investments in technology and knowledge, including with respect to how existing production systems are utilized, and the structural changes needed to improve the production systems.

Skills acquired through education and work determine the utilization of all other productive capacities, including hard and soft assets (e.g. infrastructure, institutions and policies). If LDCs are to catch up with the level of ODCs, they must at least attain the same level of human capacity development as these countries; if this is to be achieved, it will require tangible investments in education and training and targeting the right age groups. If artificial intelligence is a major component of 4IR and the heartbeat of the digital economy, LDCs should not underrate the value of innovation, knowledge and the linkages created through innovation.

The IPoA assessment also revealed the extent to which factors, such as conflict and weak institutional and governance systems, heighten the risk exposure to specific shocks. The correlation between economic vulnerability and the productive capacity categories shows that structural change is associated with lower economic vulnerabilities for all LDCs, except those that in 2018 met two of the three criteria for graduation from the LDC category. Natural resources are also associated with lower economic vulnerability for countries that graduated, and for LDCs with a high GNI in 2018. By contrast, human capital, ICTs and institutions are associated with lower economic vulnerability among countries scheduled to graduate. The countries that met the EVI and income criteria registered more vulnerability in the natural resources dimension, which they compensated with higher GNI, a vibrant private sector, or better transport infrastructure.

An important asymmetry is also observed between the countries that graduated from the LDC category and the entire set of ODCs. Energy, human capacity, the private sector and structural diversity components are associated with lower economic vulnerability among ODCs, but institutional quality and transport infrastructure have the opposite effect. For countries that graduated from the category, energy, transport infrastructure and human capital are significantly associated with higher economic vulnerability. This confirms the observation that LDCs that graduated, or those scheduled to graduate (based on the income criterion), do so because of the wealth of their natural resources. If LDCs aspire to reach the level of ODCs, the weaknesses exposed by their low score in other productive capacity components should be the focus of their policies. This is clear from the productive capacity components that are associated with lower economic vulnerability scores among ODCs.

The IPoA assessment confirms that productive capacities are key building blocks for structural transformation and trade, but their dynamic impacts on the economy will not take a concrete form until they are activated by government policy. The state of productive capacities in LDC economies limits the extent to which public policies can influence development; in some cases, countries face additional challenges because of their geographical location and subregional dynamics. The analysis of these categories suggests a trade-off among the building blocks, with most of the productive capacity categories having complementarity impacts; however, the existence of non-conventional negative correlations among the categories suggests low synergy. LDCs should exploit complementary trade structures offered by their subregional markets, for example, the Asian LDCs should make best use of their neighbours, both for providing the necessary inputs, including the technology they need, and as a market for the goods and services they export. African and island LDCs equally need to exploit their subregional markets, but they will have to intensify their investments in interlinkages, institutions and infrastructure.

It is getting harder for LDCs to graduate from the category in which they find themselves. The few countries that have graduated have often done so based on their large natural resource capacity. However, natural resources also pose the greatest source of instability to exports and raise the vulnerability of countries. The result is that economic

vulnerability persists even after countries have graduated from the LDC category. The international community may need to agree on specific support measures for the countries in the graduation pipeline, as well to others that have recently graduated, to ensure the sustainability of their respective development momentum. A differentiated support structure seems inevitable given the low graduation rates, and the slow progress towards graduation among LDCs.

Transition to the digital economy: technological capabilities as drivers of productivity

As the digital economy becomes increasingly inseparable from the functioning of modern economies, concerns about the supposed potential of digital technologies in LDCs have been heightened. LDCs are increasingly advised to rapidly design and implement development policies that support and incentivize investments in the acquisition of the technological capabilities that are needed to enable them to ride the wave of digital innovation. LDCs are falling behind in the global digital transformation race, as evidenced by the already apparent trend of a widening digital divide between and within countries. UNCTAD research confirms that traditional support programmes to small- and medium-sized enterprises (SMEs) are unlikely to be effective in addressing technological capabilities gaps.

Compelling claims about the unprecedented opportunities presented by digital technologies currently dominate the normative discourse on sustainable development. Two central predictions on the impact of 4IR in the context of LDCs exert an influence on policymaking, namely: (i) their predicted ability to induce the creation of new business models and value propositions that stimulate inclusive growth; and (ii) the potential of latecomer countries to leapfrog development. Policymakers are faced with the task of transforming such predictions into strategies that prioritize active problem-solving. This will require deep insights and understanding of digital technologies and their application across different sectors, and will only be possible by ensuring that policy responses avoid the dilution of focus from causes to symptoms. The risks associated with the latter are high because the emphasis of much of the available literature is on showcasing examples of the digital presence in LDCs, or the specific attributes of 4IR technologies that are perceived to demonstrate the predicted superior ability of these technologies to address intractable developmental problems. However, there is little concrete evidence on how these predictions could be realized in the context of LDCs, nor the policy lessons that can be learnt from this, particularly as the existing body of literature is weighted with symbolism and aspiration, but falls short of providing a detailed picture of the technological capabilities needed by firms to unlock the latent potential of 4IR technologies in LDCs.

In the context of the central aims of fostering competitive productive activities and structural economic transformation in LDCs, economic theory and emerging evidence from UNCTAD research suggests that policy responses will need to descend from the macro to the meso and micro levels in order to address the challenges of the digital era, particularly as technological capabilities are vested in economic actors at the level of the firm, or in other productive units, e.g. farms. Hence, while the critical role of ICTs as an obligatory gateway to the digital economy is undisputed, access to ICTs and other economic infrastructure needs to be complemented by investments in technological capabilities to fulfil the promise of enhanced productivity, given that 4IR technologies embody complex technological capabilities. Technological capabilities are fundamental elements of productive capacities and critical to increased productivity, competitiveness and profitability. These capabilities transform assets or resources, e.g. ICTs, into tangible, physical or intangible outputs of greater value.

LDCs face the risk of being left further behind as the technological gap vis-à-vis more technologically advanced countries widens. Industrial policy has become even more relevant than before to ensure that LDCs are not further marginalized. This need became evident with the emergence of the digital economy, and has become even more relevant in the wake of the COVID-19 pandemic. In this context, policymakers need to refocus on the role of industrial policy and its interaction and interdependence with a range of other sectoral policies, including the gendered dimensions of the digital divide, and the changing nature of production and sectoral interdependencies. For example, evidence at the global level points to the increasing servicification of manufacturing and the industrialization of agriculture. To adopt technology and invest in technological capabilities, firms need to be confident that the right policies are in place before they adopt technology and invest in new technological capabilities. This implies that targeted and coherent policy packages will be needed to support national-level investments in institutional and regulatory capacity as these will be vital to building digital policymaking capacity and the maintenance of policy coherence. Moreover, maximizing the return on investments in complementary economic infrastructure will require LDC governments to pay closer attention

to the impact of market concentration on the affordability of access to critical digital services, and the ability of LDC firms to gain entry and compete in global and national digital markets. Policymakers will also need to address the security and privacy concerns of productive actors and consumers. Global consensus has not yet been reached on the appropriate policy responses to competition issues in digital markets. Notwithstanding this, the enforcement of these responses needs to be bolder, quicker and context-specific, given the tendency for “winner-take-all markets” to generate near-monopolies.

Firms typically face internal and external barriers that disincentivize technological upgrading and the adoption of new business models. The first barrier for LDCs is that the process of unlocking the potential of ICTs and 4IR technologies is an incremental transition that engenders costs for firms. Digital transformation and leapfrogging draw disproportionately on the tacit knowledge component of technological capability, which is neither easily aggregated nor disseminated. Thus, 4IR technologies increase the cost and associated risks of acquiring technological capabilities for firms. This major market failure justifies policy action to address this problem. A second and related barrier for LDCs is that the overwhelming majority of their productive actors are resource- and talent-poor MSMEs. A third compounding factor is that the dynamic and continuous changes in production systems that are expected to be at the centre of the digital transformation give rise to a lagged emergence of productivity impacts. A further crippling factor is that digital transformation at the firm level is dependent on technological capabilities which have accrued in preceding iterations of the industrial revolution (i.e. it is path-dependent). While the world is said to be in the midst of a fourth industrial revolution, most LDCs are languishing in the first and second industrial revolutions, thereby underlining the severity of the challenge of technology absorption in LDCs. All these factors lie at the heart of the truism that firms do not naturally upgrade themselves, despite proven high returns or operating in an environment that is increasingly characterized by the presence of digital technologies.

The universe of technological capabilities that will be important for the transition of firms to acquire a digital status is likely to be as vast as the number of processes, procedures, product lines, business models and strategies that firms can adopt to set themselves apart from their competitors. Capabilities are also likely to vary by sector, the production network segment that firms are active in, as well as the nature of the interactions they may have with other firms in this network. They are also likely to differ by orientation, e.g. in the case of a firm pursuing an export-led strategy.

Key sectors of strategic interest in LDCs, such as agriculture, manufacturing and services, are in urgent need of a reset and 4IR technologies represent an unrealized opportunity. At least three prospects, which will require to be pursued concurrently, are available to LDCs. The first lies in the need to continue to consolidate the gains that have been achieved in raising productivity and fostering structural transformation through the strategic use of industrial policies. Studies suggest that some LDCs have the necessary, but nonetheless time-bound, breathing space for traditional business models to continue to be successful. The second opportunity lies in the use of digital technologies, especially ICTs, to accelerate and further strengthen the latter process of consolidation – e-commerce being an obvious example. The third opportunity is to actively pursue the digital transformation of firms in the economy as this process is path-dependent and takes time. The size of the investments and the breadth of the public policy reconfigurations that are needed to support this digital transformation are likely to be substantial. Going forward, strategic choices focused on long-term gains will be crucial in the current climate of habitually constrained LDC budgets, which have been further constricted by the impacts of the COVID-19 crisis and its repercussions on ODA flows.

Policies to develop productive capacities in the new decade

With the IPoA set to remain largely unfinished business by 2021, and the fallout from COVID-19 laying bare once again the structural vulnerabilities of LDCs, the centrality of productive capacities for sustainable development prospects is increasingly apparent. This calls for policies at all levels aimed at setting in motion the process of structural transformation through the gradual broadening, deepening and full utilization of LDC productive capacities.

Bold countercyclical policies are sorely needed to cushion the impact of the downturn and avert longer-term damage to the already-weak productive fabric of LDCs, particularly as the global recession threatens to roll back the clock on the encouraging signs of progress made by LDCs in recent years. However, this will not, in itself, foster a broad-based sustainable recovery. This will require marrying stable fundamentals with a sustained and concerted investment push to narrow the infrastructural and technological gaps of LDCs. This requires, to

the extent possible, an expansionary fiscal policy, buttressed by accommodating monetary and exchange rate policies to support domestic resource mobilization and private sector development. In this context, the role of public investment remains particularly critical for LDCs, both in the short term – to contain job losses – and over the longer term – to redress supply-side bottlenecks related to infrastructures and basic services provision, thus crowding in private investments.

Beyond the pure macroeconomic realm, industrial policies – including actions geared towards strengthening STI ecosystems – are back to the fore of the political debate. The policy experimentation ushered in in response to the pandemic has demonstrated that – when coordination problems are addressed – significant achievements can be made even in LDCs, as shown by the rapid development of testing kits in countries, such as Bangladesh, Senegal and Uganda. Interestingly, the COVID-19 pandemic has brought about a renewed debate on the pivotal role of the state not only as a “rule setter”, but also as a “coordinator” and “investor”, which calls for renewed emphasis on institutional capacities to steer development strategies and mobilize a wide range of stakeholders.

Two key priorities emerge from an LDC perspective. First, with LDC labour supply expected to increase by 13.2 million workers per year in the 2020s, the challenge of employment creation cannot be overemphasized. This will require a multipronged approach which simultaneously supports labour demand in higher-productivity labour-intensive sectors, and enhances the employability of new entrants into the labour market. Second, the role of technologies for sustainable development has become all the more pivotal in the post-COVID-19 scenario, as the fallout from the pandemic is likely to accelerate some facets of the ongoing process of industrial digitalization and servicification. The position of LDCs in the global division of labour could be further marginalized if their distance from the technological frontier lengthens and the digital divide persists or widens further. Hence, the long-standing challenges in upgrading their technological base and setting in motion meaningful technology transfer will likely become even more vital. Emerging evidence points to the serious risk of a widening divide as a result of the sharp concentration in the production and deployment of advanced technologies, the marginal engagement of LDCs in their adoption, as well as the prevailing shortages of complementary skills.

With respect to sectoral policies, if agricultural development cannot be disregarded, in view of its importance for job creation, inter-sectoral linkages and the imperative of closing long-standing productivity gaps, the creation of a viable manufacturing basis remains fundamental for LDCs, in line with Goal 9 of the 2030 Agenda for Sustainable Development. The advent of digitalization and servicification imply that some features traditionally ascribed to manufacturing – notably the scope for productivity growth and increasing returns – might also potentially apply to some services, especially in knowledge-intensive services. However, the opportunity to engage in the adaptation and production of advanced technologies and weather future external shocks largely depends on the presence of a certain manufacturing base and the acquisition of complementary skills. One of the key lessons of the COVID-19 pandemic is that resilience requires adaptability and the capacity to innovate, e.g. repurposing the production of textiles to that of personal protective equipment, or that of alcoholic beverages into disinfectants. These features are inevitably contingent on pre-existing capabilities. From a policymaking perspective, rather than framing the discussion as a dichotomy between manufacturing-led versus a services-led model, the advent of new technologies puts a premium on systemic coherence. This entails designing policies to strategically target synergies and complementarities across sectors, with a view to gradually enhance the sophistication of the economy. It also involves an awareness of the political economy dimensions underlying technological change and its potential distributional effects.

The on-going global response to the COVID-19 pandemic has provided numerous concrete examples of industrial policy measures which could be considered to redress this situation. These range from the strategic use of public procurement to advanced market commitments (which lower risks and entice investment in research and development – R&D), and from swift legal action to ensure that intellectual property rights flexibilities are actionable to proactive efforts aimed at facilitating coordination across stakeholders. More broadly, numerous developing countries have recently deployed other policy tools, including local content requirements or targeted special economic zones (SEZs). The success record of these measures remains somewhat mixed, as upgrading opportunities and spillovers to the rest of the economy have not always materialized, or have not been commensurate with the related costs. Nevertheless, industrial policies have been instrumental to industrial upgrading when designed in a balanced pragmatic manner, and within a holistic policy framework incorporating a macroeconomic framework and STI policies.

Beyond the domestic border, it remains crucial to enhance the strategic coherence of trade and investment policies with industrial policy objectives. Harnessing international trade strategically to achieve structural transformation

is part and parcel of this effort. Regional integration, in particular, can give a significant boost to attaining greater economies of scale, harness trade complementarities, and gradually enhance the competitiveness and sophistication of the economy. It can also prove instrumental to attracting foreign direct investment (FDI), and enhancing the scope for integration into regional and global value chains. Hence, in the case of African LDCs, the importance of moving forward with the implementation of the Africa Continental Free Trade Area.

It remains clear, however, that there is no “one size fits all” approach, nor a single pattern of structural transformation. The mainstream prescription of pursuing export-led growth risks falling victim to a fallacy of composition, especially in the current depressed context, as it is not possible for all countries to simultaneously export their way out of recession. Hence, to be successful, strategies geared towards productive capacity development must address the context-specific realities of each individual LDC, as well as harness their own set of comparative advantages, and account for local political economy dynamics and structural characteristics.

The accumulation of productive capacities largely occurs within the domestic economy, but is very strongly influenced by the interactions between the domestic economy and the international environment. The forms and conditions under which LDCs integrate into the global market inevitably exert a far-reaching influence on their needs, policy space, available means, and the effectiveness of different policy measures. The international community therefore has an important role to play to support the LDC quest to achieve sustainable development. These considerations are all the more relevant at the current juncture, when humanity just experienced a shock of unprecedented magnitude and is entering a decade that simultaneously marks the remaining horizon of 2030 Agenda for Sustainable Development and the new programme of action for the LDCs. In a context of intensifying global interdependence, calls for a global partnership in support of LDCs reflect the need to “build back better” and enhance the world’s systemic resilience.

The fallout from the COVID-19 pandemic has once again exposed the long-standing flaws and asymmetries inherent to the prevailing multilateral trade and financial architecture. In this context, LDCs cannot but be among the most fervent supporters of a revamped, more effective and inclusive multilateralism, capable of addressing today’s challenges and creating a more conducive international environment. They also have a large stake in the solution of long-standing systemic issues, notably in securing an adequate provision of international liquidity and of sufficient long-term development finance (including climate finance) which is compatible with their development goals. Equally, the worsening debt sustainability situation and outlook of LDCs, as well as that of many ODCs, calls for the adoption of measures that go well beyond the debt service standstill agreed by the G-20 in April 2020. Broader and more effective initiatives include: (i) renewed debt cancellation and relief programmes; (ii) the creation of an effective, comprehensive and transparent framework for sovereign debt workout; and (iii) the strengthening of the use of state-contingent debt instruments.

The limited progress against the IPoA targets also warrants an overhaul of existing international support measures (ISMs) in favour of LDCs, along five main axes. First, if trade preferences and other ISMs rooted in some forms of trade liberalization are to succeed, stronger support through the Aid for Trade initiative is needed. Second, broad capacity development efforts are necessary to improve the quality of LDC institutions and their ability to harness existing ISMs, particularly in areas related to non-tariff measures (NTMs), digital trade and trade in services, where issues of measurement, transparency and predictability are more challenging. Third, adequate policy space continues to be vital for LDCs. This calls for a strengthening of special and differential treatment, and at the very minimum for the renewal beyond 2021 of existing flexibilities under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). It is also imperative that LDCs be reassured that they will not be subjected to litigation, under the WTO or other regional or bilateral trade and investment agreements, for policies adopted to counter the damage resulting from the COVID-19 pandemic. This can be done through a “peace clause”, or long-term standstill, that would protect LDC governments from litigation on issues of intellectual property, data and information.

Fourth, stronger mechanisms to foster meaningful technology transfer by private firms are critically needed. This theme should feature prominently in the formulation of investment promotion regimes for LDCs (Sustainable Development Goal Target 17.5). Equally, the use of public development finance through private sector instruments should be explicitly linked to genuine and documentable practices fostering technology transfer. Fifth, without dismissing the urgent need for multilateral efforts to promote meaningful technology transfer to LDCs, there is an ample scope to strengthen regional and South-South mechanisms for technological cooperation, notably in areas such as green technologies, industrial and digital cooperation.